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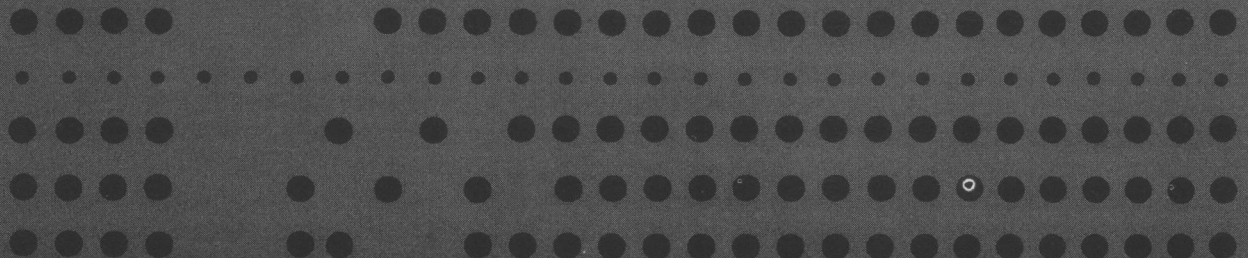
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Physicians and other professionals are continually called upon to make decisions about treatment and programs intended to affect the health of individuals and populations. This enormous responsibility makes understanding the measures of health imperative. Toward this end, a review of the status of health status indicators was undertaken. Specifically addressed were the following questions: What is health? What are the purposes of health status indicators? What are the problems in developing adequate measures of health? What is the present state of the art in measuring health status? Are any of the new and developing health status indicators practical? And finally, what is the outlook for health status indicators?

The Concept of Health

The most often quoted definition of health is that of the World Health Organization: "Health is

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a state of complete physical, mental, and social well-being, and not merely the absence of diseases and infirmity" (1). Widely criticized for its abstractness and simplicity, the WHO definition is nevertheless useful in an uncritical environment or in those instances when the public is unwilling to ask, "What techniques do you have to produce physical, mental, and social well-being in those who are free from disease or infirmity?" (2).

Sigerist offered a similar definition of health: "Health is, therefore, not simply the absence of disease: it is something positive, a joyful attitude toward life, and a cheerful acceptance of the responsibilities that life puts on the individual" (3). Another definition and idea offered by Sigerist (4) was that of health as an undisturbed rhythm, "We all live in a specific rhythm, determined by nature, culture, and habit. Day and night alternate in an unending ebb and flow, and we ourselves conform to this rhythm with waking and sleeping, with work and rest. . . . An undisturbed rhythm means health. . . . Disease then strikes abruptly into this structure."

Others also have offered definitions: Wylie's modification of Spencer's definition, "Health is the perfect, continuing adjustment of an organism to its environment. Conversely, disease would be an imperfect continuing adjustment" (2a); Hoyman's definition, "Health is optimal personal fitness for full, fruitful, creative living" (5); Lifson's definition, "Health is the degree to which a human's functions (sensing, data processing, motioning . . .) are performed and pain is absent" (6); Romano's definition, "Health consists in the capacity of the organism to maintain a balance in which it may be reasonably free of undue pain, discomfort, disability or limitation of action including social capacity" (7); and finally, Blum's modification of Romano's definition, "Health consists of: 1) the capacity of the organism to maintain a balance appropriate to its age and social needs in which it is reasonably free of gross dissatisfaction, discomfort, disease, or disability; and, 2) to behave in ways which promote the survival of the species as well as the self-fulfillment or enjoyment of the individual" (8).

The problems with these definitions are ambiguity and abstruseness. For example, how does one translate into operational language concepts such as "social well-being," "cheerful acceptance," "rhythm," "continuing adjustment," "fruitful creative living," "balance appropriate," or "gross dissatisfaction"? Where in these definitions is the re-

lationship between disease, environment, and health taken into account? Finally, where in these definitions is the perspective of the definer recognized? Individual persons, practicing physicians, public health officials, families, and society view health differently. To an individual person, good health may be "feeling well" or absence of discomfort; to a physician, it might be absence of clinical disease, and, perhaps to society, health is closely associated with the individual's fulfilling his social role.

These definitional difficulties should not be considered lightly. Just as the inability to clearly define the objectives of any program or organization leads to the operational difficulty of measuring advancement toward a diffuse goal, so our inability to define health leads to the obvious problems of not being able to measure health status. This difficulty of conceptualizing health is perhaps the major constraint on the development and usefulness of health status indicators. Nevertheless, this constraint is tempered to a degree by the purposes and functions that health status indicators are meant to serve.

Purposes of Health Status Indicators

But what are these purposes? Wilbur Cohen, while Secretary of the Department of Health, Education, and Welfare, suggested that indicators help keep score, that is, they can tell the status of the nation's health as well as the progress that is being made toward its betterment (9). At the most basic level he is no doubt correct.

A somewhat more comprehensive idea, however, is presented by Bickner (10). He suggests that health status indicators serve three primary functions: public information, administration, and medical science. The first function is simply that of giving readily understandable information, in the form of a consumer price index of health, to the public. This information would be used by health professionals as a means of informing the general public and the legislatures on the health situation in order to gain more attention for health. In operational terms, this means that the indices would give the public and the legislatures the readily understandable and digestible information they need to allocate more money for health.

The second function, Bickner suggests, is administration. Here he notes that indices of health status would help managers be better health planners, evaluators, financial managers, and administrative decision makers. Medical science, the third function for health status indicators, would help

those who are interested in performing descriptive and experimental research in medical care. In summary then, Bickner offers the crucial concept that health status indicators must be considered from the perspective of the dynamic need that the indicator fulfills.

Defining health and clarifying the purposes of health status indicators, then, are two major problems encountered in developing an index of health. Other problems are validity, reliability, data sources, and cost.

Problems

Validity of measurement means that what is actually being measured is what is purportedly being measured. For example, the National Health Survey uses interview reports to determine disability data; and, as Sullivan points out, the validity of these data "is difficult to evaluate because there is often no criterion for comparison" (11). Further, he notes that "the validity of disability data based on interview reports will be open to question until extensive use of such measures in a variety of studies has established their relation to clinical measures on the one hand and social variables on the other" (11a). In one attempt to test the validity of interview data in relation to clinical data, Meltzer and Hochstim encountered several methodological problems but still found what appeared to be a low validity level (12).

Reliability of measurement is a concern with the accuracy of the measuring instrument, that is, does the instrument consistently give the same reading when measuring the same phenomenon. Sullivan's statement on this issue is most significant (11b):

Reliable measurement requires elimination or control of extraneous factors influencing the measurement. Since a primary purpose of a health index is comparison over time, evaluation of reliability should take into consideration both factors influencing measurement under current circumstances and the possibility of measurements over time being distorted by irrelevant social changes. Methodological studies have shown that many aspects of survey procedure influence the measures obtained.

Data sources and cost are perhaps the major fixed constraints on developing indices of health. If it were agreed that disability or productive man-years were appropriate indices of health, how would data be obtained? Special surveys could be designed or secondary sources of data, such as absentee records of schools and plants, might be used. But, if one wanted to refine these data for reliability and validity, problems of nonavailability

and cost of information would be encountered.

This last point, cost, is an obvious restriction about which little is said or written. But, for example, if one wanted to replicate the National Health Interview Survey sample in the State of California it would cost between \$1.2 and \$2.4 million, while the Office of Economic Opportunity estimates a cost of from \$30 to \$80 per household interview (this includes basic data processing). How many States, cities, or other political subdivisions could afford to spend a comparable amount of money to get questionably valid data about poorly defined concepts for oftentimes incomprehensible purposes?

Presently Utilized Indicators

Regardless of the problems in developing adequate measures of health, many indicators are being used and a number of new indicators have been proposed. Mortality and morbidity have been the traditional measures of health. Death is the well-defined and recorded event that has had great value as an indicator until very recently.

In a discussion of this situation, Moriyama (13) states: "The past declines in the death rate at the various ages are due primarily to reductions in the death rate for infectious diseases . . . by 1950 the mortality from the diseases of infectious origins had reached a level where death rates for the infectious diseases no longer contributed in a major way to the overall mortality rate . . . Further reductions in total mortality in the United States are possible, but any substantial decreases must come from the lowering of the death rates for chronic noninfective diseases and for accidents and other violence." Moriyama concludes that, "The nature of the past changes in mortality and the past behavior of the death rates have made moot the value of statistics of deaths from all causes as a measure of health in countries like the U.S."

Infant mortality is, perhaps, the most popular of the mortality indices. Widely quoted, the figure has been most often used to compare the level of health of the United States and other countries. Typically, a public official notes that the U.S. infant mortality rate is higher than 12 to 15 other countries. To him, this means we are not doing a very good job with health. While the reliability of infant mortality data is still in question, it nevertheless has been demonstrated that this statistic "appears to no longer [be] a particularly useful indicator of the level of living and sanitary condi-

tions for a country like the United States" (13). Nevertheless, after all the arguments are evaluated, mortality is the only identifiable common denominator of health status and, thus, its value should not be categorically dismissed.

Morbidity is conceptually and pragmatically more difficult to use as a health status indicator than mortality. Conceptually, one encounters the problems of definition and classification. When is a person sick? How sick is sick? How should different morbid states be classified—very morbid, medium morbid, and not so morbid? Pragmatically, there are problems with cost, reliability, and validity. How can the different morbid states be measured? How can assurances be built into the system so that a measurement taken by one person on one day is comparable to another's measurement on a different day? A classic example of the problems encountered in some morbidity studies is discussed by Zola (14), who found that levels and types of complaints varied among different ethnic groups for the same apparent clinically evidenced disease. Obviously, morbidity does not equal morbidity.

The National Health Survey makes extensive use of a variety of morbidity indicators. Reports generated by this research present data on the populations' acute and chronic conditions, days lost from work and school, activity limitations by degree—major, some, and none—hospital days, numbers of physician and dentist visits, and the interval since last physician visit. While great care is taken in training interviewers and establishing definitions for this extremely sophisticated study, the national survey, as Sullivan noted (11b), still encounters problems in reliability of measurements. For example, in a special study of hospitalization (15) it was found that there was underreporting based on the disease, the patient and family's socioeconomic status, the length of stay in the hospital, the elapsed time since the hospitalization, and the relationship of the reporter to the patient.

The health examination portion of the National Health Survey was confounded by seasonal and geographic measurement variances, cost of training examiners, and quality control of the laboratory work. Perhaps more significant is the limited extent of the medical examination; that is, in the adult physical, the physicians' appraisal of the patient included neither an abdominal nor an internal examination. In discussing the value of the Health Examination Survey, the designers suggest that, "the results will be the product of highly

standardized measurements on a probability sample of the population and that these measurements were selected initially because a good many qualified people thought them relevant to a wide variety of purposes" (16).

A final, traditional indicator of health status worth noting because of its popularity might be classified generically as an activity count. The rationale for using these counts as indicators is the assumption that the number of services provided and personnel and facilities available are related to health status. This assumption leads one to conclude that the health status of a community is higher if it has a higher physician-population ratio than another community. Is this valid? Perhaps citizens from east Baltimore or parts of Boston would not reach the offered conclusion.

Activity counts require considerable refinement and probably a greater focus on smaller subsegments of the population before they will be sufficiently sensitive indicators. But, even if that were possible, it must be remembered that activity counts are only quantitative indicators—and, as such, do not account for the qualitative aspects of medical care. Examples of activity counts used as indicators of health status are easily found.

The following general medical care indicators are listed in a 1969 Department of Health, Education, and Welfare document (17):

- Nonfederal hospital beds and utilization rates, by type of hospital, United States, 1950–1967
- Annual physician visits per person, by age and sex, United States, 1964–1967
- Annual disability days per person by family income, type of disability and age, July 1966 to July 1967
- Nonfederal physicians, by region and major professional activity, December 1967
- Registered nurses by field of employment and educational preparation, United States, January 1967
- Registered nurses employed for public health work, by type of agency, United States, 1966 and 1968
- Physician availability, by region and major professional activity, December 1967
- Registered and practical nurses in practice, estimated number and rate per 100,000 population, United States 1950–1968.

The Office of Economic Opportunity's surveys of health centers use a combination of activity counts and morbidity type data (18). Their varied list of health indicators is comprised of activity

limitation caused by chronic conditions, bed disability days, usual source of care, interval since last physician visit, total physician visits, hospital admissions, length of stay, post-hospital physician visits, dental visits, and dental care received.

A combination of activity indicators and morbidity data were used as health indicators in the Census Use Study. Deshaies (19) reports, for example, that the following health status indicators were used: prematurity, prenatal care utilization, outpatient clinic utilization, physician and dentist utilization, degree of disability in the population, and prevalence of morbidity in the population.

Evaluation Criteria for Indicators

The preceding criticisms indicate a need for criteria for evaluation of health status indicators, a subject which both Sullivan and Moriyama have considered. Sullivan (11c) suggests two primary criteria for an index of health: (a) it should show changes over time in significant aspects of the health of the living as well as in mortality and (b) it should be subject to analysis into components which provide a useful description of health problems underlying index values.

Moriyama (13a) states that an index of health should have certain desirable properties, such as (a) it should be meaningful and understandable, (b) it should be sensitive to variation in the phenomenon being measured, (c) the assumption underlying the index should be theoretically justifiable and intuitively reasonable, (d) it should consist of clearly defined components, (e) each component should make an independent contribution to variations in the phenomenon being measured, and (f) the index should be derivable from data that are quite feasible to obtain.

Bush and Fanshel's suggestions on criteria are also insightful (20). They state:

To be widely accepted and used, a quantitative output indicator must integrate morbidity with mortality data, and allow comparisons across disease categories and agency lines. It must be acceptable in a pluralistic health system, where the elements are only loosely coupled together, and agreement among multiple decisionmakers about common goals is difficult. It must serve as a guide to data collection, since much expensive data gathering is unrelated to the goals of the system and contributes little to real decisions. Finally, the end-product or output of the health system must be defined clearly enough that it can be related to a wide range of resource inputs and activity indicators, allowing performance analyses of various health programs.

Finally, the following are my criteria for health status indices, some of which are partly borrowed from Sullivan and Moriyama:

- The purpose of the health status indicator should be clearly stated. For example, is the health status indicator meant to be used for public information purposes, program priorities, or what?
- The numerator and denominator data used to compute the index should be readily understandable by not only those who will use the indices, for example planners, but by those who will supposedly be influenced by the index, for example legislators.
- The data used for computation must be presently available from existing data sources with minimal modifications.
- The process of computing the data must be readily understood by those who will be using the data.
- The components of the index must be clearly identifiable and their individual effects on the total index must be distinguishable.
- The data used in the index must be reliable and valid.
- There must be a built-in mechanism to evaluate the validity of the measure by correlating measures of health status with other measures of social well-being.

These various criteria for evaluating indices of health should be kept in mind as a number of new and developing health status indicators are reviewed. Older works, such as those by Sanders (21) and Fanshel and Bush (22), have been reviewed elsewhere and are not discussed here.

State of the Art

Sullivan (23) recently proposed a general index of health that would combine mortality and morbidity data and would be sensitive to changes in health status over time. The mortality data would be provided through presently available life expectancy tables, and the morbidity part of the index would use information from the National Health Survey. As a general index at the national level, Sullivan's idea is probably operational although, as he notes, data can be obtained only for the total population and a few major population categories (23a). Perhaps the most significant limitation is that of not having enough appropriate data. This problem, Sullivan states, is, "likely to preclude application of the indices for States or local areas for the foreseeable future" (23a).

Another operational health status index that is presently being tested is the Indian Health Service's *Q* index (24). The purpose of this measure is to provide managers who are setting program priorities with quantitative information on the

cost-benefit relationships of different programs. This indicator derives a Q value by using a fairly simple formula with two major components. One component is a ratio of the age- and sex-adjusted mortality experience of the Indian population and the total U.S. population arrived at by multiplying the crude mortality rate of the years lost because of premature death among Indians. The other major component is derived from the hospital days and outpatient visits of the Indian population.

The Q index basically uses activity counts—hospital days and outpatient visits—as a surrogate of morbidity; not included, however, is any measure of disability. In a discussion of the index, Miller notes that, “the Q value correlates closely with determinations based on professional judgments. In at least one instance when the value was used on an experimental basis in a slightly different form than described here, the index was judged applicable and beneficial in an urban setting” (24a).

The value of Q as an index for setting program priority should be seriously considered since, even with its shortcomings, it is readily computed, it is understandable, and it can work with presently available data although linkage of the data may be both cumbersome and costly.

The Northeast Ohio Regional Medical Program has postulated a general health status index. The basic formula states that the health of the population is a function of genetic and socioeconomic factors and “the application of health services to manifest need” (25). The operability of this notion is based on some debatable premises. For example, it was assumed that “for diseases with a high risk of death, such as heart disease, cancer, and stroke, morbidity parallels mortality and that mortality data alone could be substituted for morbidity and mortality data” (25). With this substitution, the final formula offered was not for the health of the general population but rather the health status of the population with heart disease, cancer, and stroke. Another problem with this formulation is that somewhere between the initial conceptualization and final verbalization the formula is rewritten to account for the fixed constraints of available data, thus leaving the following equation:

$$\left(\frac{1}{\text{age adjusted death rate}} \right) = f \left(\frac{\text{crude discharge statistics}}{\text{crude area deaths}} \right) \left(\frac{\text{genetic and socioeconomic factors}}{\text{factors}} \right) \left(\frac{\text{other medical services}}{\text{deaths}} \right)$$

A final and obvious criticism relates to the absence of any quantitative measures of the genetic and socioeconomic factors. Since these are components of all the equations, and are, obviously, of some importance, how shall they be treated? The formula, while conceptually interesting, appears to be neither operational nor practical. With careful development, however, the formula might provide a meaningful, relevant, and needed general index of health.

An index that demonstrates many of the problems with health status indicators was developed by the Human Population Laboratory of the California State Health Department in Berkeley. Basically, three dimensions of health are considered—physical health, mental health, and social health. Estimations of these dimensions are arrived at by means of a 23-page self-administered questionnaire.

For physical health, questions are asked about “33 specific complaints—five types of functional disability, 14 chronic conditions, three impairments, and 11 symptoms associated with chronic illness” (12a). The mental health spectrum is a measure of psychological well-being based on answers to a number of questions in the questionnaire. The third part of the health spectrum considered is that of social health, an index comprised of four dimensions—marital relationship, employability, community involvement, and social integration. To date, testing of reliability and validity of the physical health spectrum indicates that the survey of physical health has high reliability but questionable validity. The instrument, then, does an excellent job of measuring what it measures, but what it measures is in doubt.

The problem of measuring something, assuming it is health and, therefore, calling it health, is not unusual with health status indicators. Yet, when other independent measures of health are considered vis-a-vis, the first-measure correlations are not consistently high. Consistently high correlations between classes of indicators should be required before indicators are accepted for use. Methods for testing are necessary; and, toward this end, the Human Population Laboratory's work is a significant step forward.

Indices of health have also been derived through the use of mathematical models. Chiang (26), for example, developed a health index by combining a measure of the frequency of illness, the duration of illness, and finally, mortality. Several problems exist with Chiang's work. First, the

data for the final health index formula are provided by a variety of poorly understood formulas. Second, the data for inclusion in the formulas, while possibly available nationally, may not be available on a State or local level. Finally, conceptually, the answer to the question, "What is the average fraction of the year in which an individual is healthy?" (26), that is, finding the "mean duration of health" is not an appropriate index of a population's health. Again, this conceptual formulation accounts for but one aspect of health, that is, the quantity of life, with no regard to the qualitative and nonphysical dimensions of health.

Other mathematically oriented procedures, such as factor analysis, have been used to derive health indices. Lawton and associates, for example, looked at 30 different indices of health in an attempt to find a common structure, or several common structures, among the indices. Their final list of health factors is definitionally vague and not impressive when one realizes that the factor loadings and explained variances are low, particularly since they used 30 items and 10 rotations. Their conclusions, however, are significant: "The factor structure of indices of health is quite complex . . . and . . . We hope that this study and others . . . will put to rest the idea that there is a single concept of health which may eventually be reduced to an operational definition" (27).

The risk profile is an operations research approach presently being tried at the Mount Sinai Medical School. This model uses preexisting data to generate a risk profile for each patient under its care. From this model, one could hypothesize that as the risks for an individual or community lessened, its state of health had improved. Still in the developmental stage, this idea appears promising, although it seemingly requires massive amounts of existing and new data as well as much judgmental input from health professionals.

Mathematical models are also being developed in the health index project of Bush and Fanshel (20a). In this project, health status is divided into a number of different functional levels ranging from well-being to death. Probabilities for movements from one level to another based on different programmatic situations are devised by professional value judgments. The mathematics of the process as well as the source of data are sometimes obscure, but the project's work does raise hope for the development of a workable index. The major limitation of this work is noted by the researchers: "all such applications [mathemati-

cal] hinge on methods to empirically define the states and determine their values" (20b).

A final category of indices might be called proxy measures. In 1969 Kisch and associates (28) proposed a proxy measure that would consist of four questions dealing with days of hospitalization, drug usage, acute conditions, and chronic conditions. The validity of the questionnaire, self-administered by patients, was tested on two occasions by having two physicians, based on the records of medical history and physical examination, rate each patient as being in good health, medium health, or poor health.

On both pretests, a high degree of agreement was found between the proxy score generated by the self-administered questionnaire and the physicians' ratings, although the proxy score overestimated the number of patients in good health. Limitations offered by the authors are, "that the proxy measure is a survey research tool . . . not suitable for physical examination or medical history [and that it] is a significant but, nonetheless, biased predictor of patient health" (28a).

Other criticisms of this proxy measure are the assumption that the physicians' judgment, based on an examination of records, is the appropriate indicator of health status; the use of only two physicians as raters—perhaps five physicians' ratings would be more valid; and finally, the insensitivity of the good, medium, and poor health categorization. Essentially, the proxy measure is not dissimilar to a self-administered medical history and the standard of good to poor health is a generally agreed upon value judgment of the professionals.

Perhaps at the other extreme of proxy measures is the use of economic attributes as indirect measures of health status. Such attributes could be income, employment, demographic, or residence measures. In some studies these economic indices have been correlated with various mortality rates and morbidity rates. The correlations tend to be high; but are the correlating health statistics appropriate measures of health status? For example, if a particular economic index is closely correlated with mortality, the correlation does not legitimize either the mortality data or the economic data as health status indicators.

In summary, much work is underway in the development of health status indicators. Field tests are being planned or are in operation for Sullivan's new general index of health and Miller's *Q* index. The California Health Department's goal is

to devise a "method of indexing health status that can be used to monitor the condition of the population and in turn alert the State to developing problems" (29). The Office of Economic Opportunity has collected a large amount of data, and, with Systems Sciences, it is working toward development of more sophisticated general health indicators. The risk profile concept in use at Mount Sinai Medical School may also turn out to be a feasible health status indicator. Finally, Bush and Fanshel's research may result in a workable index of health.

Unfortunately, all the projects mentioned have two common problems—conceptualization and value judgments. The problem of conceptualization cannot be ignored. What is health? A clear (or clearer) conceptualization of health is needed before significant progress can be made in measuring health. It is hoped that Prof. Monroe Lerner's interest and research at Johns Hopkins University in the conceptualization of health will make major contributions toward a framework in which health can be understood. Additionally, it is expected that Dr. Sidney Katz of the Michigan Department of Public Health will continue with his work that is directed toward finding and tying together the common thread presented in health status indicators over the years. This too will make a tremendous contribution toward the development of health status indicators.

The problem of value judgments is perhaps the least discussed. Realistically, since value judgments enter into health status indicators, one must ask how these judgments should be made. Should they be made in the traditional blind manner or should appropriately sophisticated methods be utilized or developed? Discussions and reports of scrutiny of the process and methods for making value judgments have recently entered the literature. For example, in late 1970 Fanshel and Bush (22) expressed concern about methods and used the paired comparison method for making judgments about assignment of different weights to states of function and dysfunction. Another, certainly simpler, method was used in Wisconsin where a questionnaire, containing many health status indicators, was sent by the Wisconsin Department of Health and Social Services during the summer of 1970 to a number of health professionals for their opinion on the planning value of each of the indicators.

At present, no method or concept for making value judgments is sacrosanct. Therefore, it must

be concluded that research is necessary to find the most reasonable ways for both the public and professionals to make their value judgments.

Conclusion

Those who are searching for valid indicators of health status should recognize first the limitations of this particular review; that is, it is concerned only with general health status indicators. Environmental health indicators, for example, although somewhat related to general health status indicators, were not included in this report. Second, all but the grossest indicator, mortality, require some degree of value judgment; present methods for making these judgments are poorly understood and demand considerable study. Next, physicians and other health professionals should recognize the conceptual problems in developing health status indicators—the administrative strategy of muddling through has no place in dealing with the crucial matter of health. Finally, it should be recognized that the fixed constraints of data availability and cost put realistic limitations on any new system of gathering input information for health status measures.

A recommendation for action could be adoption of one or several presently existing (theoretical or experimental) indicators. On the other hand, perhaps at present no action should be undertaken. The first recommendation is more attractive because of its decisiveness and action orientation. Implied in such a decision is faith in the reliability and validity of the selected indicators. This faith must be strong because once a system is changed to collect data for the indicator, it will be bound to that indicator. Of course, parallel data-gathering efforts also could be set up that would not affect the present system; this might be conceptually acceptable, but it is pragmatically difficult to buy (or sell) on the basis of cost.

The recommendation of no action, perhaps less attractive because of its lack of decisiveness, is predicated on two factors. First, it regards presently existing indicators as generally unacceptable and, second, it implies a faith in future developments.

If one believes, as I do, that researchers like Bush, Fanshel, Katz, Lerner, Miller, Sullivan, and others are on the right track toward conceptualizing health and developing indices to measure it, then "swinging" with one indicator or group of indicators at the present time is inappropriate. However, if, judging by the slow, unsteady, and insignificant progress toward finding health status

indicators, one believes that the future is unlikely to herald major breakthroughs, then it might be appropriate to select and use the best available indices.

This discussion has considered health status indicators from both the conceptual and pragmatic viewpoints. The opinions and ideas expressed are based on both a review of the literature and on many discussions of the subject with scores of people throughout the country to whom I am grateful and apologetic for any possible misconceptions.

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